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SUSAN ROSENAU
ADMITTED IN D.C. ONLY

December 17, 1992

Our File No.
1049-101-63

Ms. Donna R. Searcy
Secretary
Federal Communications Commission
Washington, D.C. 20554

Re: RM No. 8092
Request for Allocation of Two MHz in the 915 MHz for the Co-Secondary Use of Wind Profiler Radar Systems

Dear Ms. Searcy:

Submitted herewith on behalf of Radian Corporation, are their **REPLY COMMENTS** in the above-referenced matter. Enclosed are an original and nine copies, a copy for each of the Commissioners. Please note that due to circumstances beyond our control, we have not yet received Radian's Engineering Statement, referenced in the comments as Appendix A. We will submit the missing appendix by close of business tomorrow.

If there are any questions concerning this matter, please communicate directly with this office.

Respectfully submitted,

RADIAN CORPORATION

Susan H. Rosenau
Its Attorney

SHR/cp

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List A B C D E

Before The

Federal Communications Commission

Washington, D.C. 20554

In The Matter Of	)	
	)	
Request for Allocation of Two MHz in the 915 MHz Band for the Co-Secondary Use of Wind Profiler Radar Systems	)	RM No. 8092

TO: The Commission

REPLY COMMENTS AND AMENDED PETITION FOR RULE MAKING

James E. Dunstan, Esquire
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Suite 900
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December 17, 1992

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SUMMARY

Four commenters responded to Radian Corporation's August 13, 1992 Petition for Rule Making seeking allocation of 2 MHz in the 914-916 MHz band for the use of Radar Wind Profilers. In response, Radian states:

- EnScan, Inc.'s opposition should be dismissed because Part 15 devices must, by definition, accept interference from devices licensed to other authorized services. Further, there is no basis for Enscan's contention that 900 MHz Wind Profilers will interfere with Part 15 devices.

- Telxon Corporation's comments in opposition to Radian's petition lack sufficient specificity regarding the equipment Telxon uses for Radian to meaningfully respond.

- The environmental uses of 900 MHz Wind Profilers justify the requested allocation, and 400 MHz Wind Profilers are technologically incapable of gathering the same environmental data.

- Absolutely no evidence exists to support any fear of interference resulting from the operation of 900 MHz Wind Profilers, in remote or populated areas. In over ten years of experimental operation, only one incident of interference was reported and it was successfully corrected.

- The operating principles of the 900 MHz Wind Profiler prove the commenters' theoretical interference claims to be unfounded.

- Issuance of an NPRM is not premature because the pending WARC study primarily concerns 400 MHz Wind Profilers, and because the Commission is not prevented by the activity of international groups from taking the lead in pursuing domestic allocations for new services.

- Radian herewith submits proposed rules and amends its original petition proposing a 2 MHz allocation to request a 12.5 MHz allocation.

- Accordingly, the Commission should issue a Notice Of Proposed Rule Making for the Allocation of 12.5 MHz in the 908.75-921.25 MHz band for the use of Radar Wind Profilers.

Before The

Federal Communications Commission

Washington, D.C. 20554

In The Matter Of	)	
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Request for Allocation of Two MHz in the 915 MHz Band for the Co-Secondary Use of Wind Profiler Radar Systems	)	RM No. 8092

TO: The Commission

REPLY COMMENTS AND AMENDED PETITION FOR RULE MAKING

Radian Corporation ("Radian"), by its attorneys and pursuant to 1.405(b) of the FCC's Rules, 47 C.F.R. § 1.405(b), hereby files its Reply Comments and seeks to amend its Petition for Rule Making in the above-referenced matter. In support of its Reply, Radian submits as follows:

I. BACKGROUND

On August 13, 1992, Radian filed its Petition for Rule Making requesting that the FCC initiate a proceeding with an aim toward allocating frequencies in the 915 MHz range on a co-secondary basis for use by next-generation Wind Profiler Radar Systems ("Wind Profilers.") The Commission issued a Public Notice on October 1, 1992 (Report No. 1909 (Oct. 1, 1992)), requesting comments by November 2, 1992, and reply comments by November 17, 1992. Radian filed an unopposed request for extension of time and was given until December 17, 1992, to file its reply.

Four parties filed comments in response to Radian's Petition for Rule Making. Formal oppositions were received from EnScan, Inc. ("EnScan") and Telxon Corporation ("Telxon"). The American Radio Relay League, Inc. ("ARRL") and AMTECH Corporation ("AMTECH") filed comments questioning certain aspects of Radian's Petition but did not formally oppose Radian's Petition. As demonstrated herein, none of the commenters raise issues so significant as to require that the Commission dismiss Radian's Petition. Rather, these comments are either ill-founded, or can be resolved in response to a Commission Notice of Proposed Rule Making.

II. THE FORMAL OPPOSITIONS DO NOT RAISE ISSUES SUFFICIENT TO DENY RADIAN'S PETITION

A. ENSCAN HAS NO STANDING TO OPPOSE RADIAN'S PETITION FOR RULE MAKING

EnScan opposes Radian's Petition on the grounds that use of the 915 MHz band by Wind Profilers will cause interference to its Part 15 Automatic Meter Reading ("AMR") low power devices. Radian disagrees that its Wind Profilers will cause interference to such devices and will address interference issues below. More important, however, EnScan simply cannot be heard on this issue. As the operator of unlicensed Part 15 devices, EnScan must not cause interference to licensed operations in the 915 MHz band, and must accept interference from such devices. In its Report and Order allowing Part 15 devices to operate in the 915 MHz band, the FCC reiterated this fundamental principle.

> **Thus, we will not restrict the use of these bands by Part 15 equipment because of the possibility of interference to that equipment by equipment operating under other Rule parts.**

Revision of Part 15, 4 FCC Rcd. 3493, 3502, 66 RR 2d 295, 308 (1989). The Commission went on to warn Part 15 operators of the dangers of choosing to operate on an unlicensed basis.

> **In view of the absence of interference protection for Part 15 devices, it would appear that, wherever possible, operation under the authorized services would be preferable to operation under the Part 15 rules. We therefore encourage parties with need to operate RF equipment at higher emissions levels than those permitted herein to seek authorization under other provisions of our rules.**

Id.

Not only must Part 15 operators give way to users licensed for those frequencies at the time, but must give way to subsequently authorized services as well.

> **Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency by virtue of prior registration or certification of equipment. . ..**

47 C.F.R. §15.5(a). See also LORAN-C, 5 FCC Rcd. 7060, 68 RR 2d 634 (1990) (new allocation of frequency which might require Part 15 devices to shift frequencies or cease operations). Based on the above, it is clear that EnScan has no standing to oppose Radian's Petition, and its opposition should be dismissed.

B. TELXON'S OPPOSITION LACKS SUFFICIENT SPECIFICITY TO ALLOW RADIAN TO COMMENT

Telxon identifies itself as an equipment manufacturer whose customers will be effected adversely if the FCC allows Wind Profilers to operate in the 902-928 band. Telxon briefly describes itself, but states

only that it uses "spread spectrum equipment which operates over the frequencies 902-928 MHz." Telxon Opp., ¶ 2. Telxon does not specify, however, whether or not it or its customers are FCC licensees. Because its Opposition is so sparse, Radian is unable to determine whether Telxon builds Part 15 low power devices, or possibly devices that operate in the Automatic Vehicle Monitoring ("AVM") service governed by Part 90. Further, without sufficient specifications as to its equipment (power output, receiver sensitivity, etc.), Radian is unable to address the interference potential of Wind Profiler operations in the 902-928 MHz band, assuming that Telxon or its customers are entitled to protection in the first instance. The issuance of a formal Notice of Proposed Rule Making should not be held up by Telxon's vague claims of potential interference.[1]

III. REPLIES TO COMMENTS FILED BY ARRL AND AMTECH

Neither ARRL nor AMTECH formally oppose allocating frequencies in the 902-928 MHz band for Wind Profilers. Indeed, AMTECH concludes that:

> **[a] non-governmental wind profiling service located in the 914-916 MHz band that is co-secondary with amateur radio operations may indeed be compatible with the uses already authorized in the 902-928 MHz band -- including automatic vehicle monitoring ("AVM") and the possible expansion thereof into the 912-928 MHz Band.**

AMTECH Comments, p. ii. AMTECH and ARRL raise a number of questions, some of which can be answered in the context of this Reply,

[1] In response to Telxon, Radian would note that both it and the U.S. government have operated 915 MHz Wind Profilers since 1979 on an experimental basis, many near major U.S. airports. See infra, Section III(B).

and some, by definition, are better addressed in the context of a response to an FCC Notice of Proposed Rule Making.

A. The Need for 900 MHz Wind Profilers

Both AMTECH and ARRL question the need for 900 MHz Wind Profilers. AMTECH questions why 400 MHz Wind Profilers are not sufficient. AMTECH Comments, pp. 11-14; ARRL Comments, p. 3. As Radian's Petition and substantial reference material evidence appended thereto, the types of wind profiling which can be accomplished vary markedly with the frequencies used. The lower the frequency, the higher the altitude which can be sampled. Higher frequencies allow for more detailed profiling of lower atmospheric winds and particulate movements. Radian Petition, p. 6, and accompanying notes. While 400 MHz Wind Profilers normally have a minimum sample height of 700 meters, 915 MHz Wind Profiler can sample the atmosphere down to as low as 100 meters. After more than a decade of data collected from experimental uses, 900 MHz Wind Profilers have proven to be especially suited to monitoring the transport of pollution particulate and ozone levels. Recently, in conjunction with its request for Stage 3 authority from NTIA, the National Oceanic and Atmospheric Administration ("NOAA"), has noted that a network of 900 MHz Wind Profilers, established around nuclear power plants, would provide optimal wind information in cases of inadvertent radioactive emissions occurring. Appendix C, p. 3. 900 MHz Wind Profilers have been used to monitor pollution flow around a number of environmentally sensitive areas such as the Grand Canyon, the San Joaquin Valley, and the Denver plateau. Radian Petition, Appendix G. Radian has also supplied data for the Lake Michigan Ozone Study and to

the Texas Air Control Board. Many of the 80 EPA severe ozone non-attainment areas in the U.S. will be able to utilize 900 MHz Wind Profiler systems to help comply with the Clean Air Act Amendments of 1990 if the FCC moves forward with an allocation.[2]

Although these uses of the spectrum may not be as commercially rewarding as speeding automobiles through toll gates with automatic toll collection, Radian submits that wind profiling is nonetheless a strategic use of the spectrum. The incoming Clinton administration has placed a priority on environmental issues, and the Radian system provides crucial data on which critical environmental decisions may be based.

AMTECH also questions why Wind Profilers in the 400 MHz band are not sufficient to meet the commercial need enunciated by Radian. AMTECH Comments, p. 11-14. The answer is two-fold. First, as demonstrated above, 900 MHz Wind Profilers are especially suited to profiling those portions of the atmosphere where major pollutants collect. Second, the ability to use 400 MHz systems in the future may be limited because of interference constraints. As Radian's Petition pointed out, the Department of Defense has objected to the use of 400 MHz Wind Profilers. Radian Petition, p. 7. Further, 400 MHz Wind Profilers have been demonstrated to cause interference to the SARSAT (Search and Rescue Satellite Aided Tracking) and its Russian counterpart, COSPAS. Radian Petition, p. 6, and associated notes. Ultimately, it may well be that the only suitable frequency for Wind Profiling will be the 900 MHz band.

[2] A commercial allocation is necessary because many of the entities tasked to monitor compliance with the Clean Air Act Amendments will be non-governmental entities such as environmental districts, chemical companies, and universities.

B. Interference Considerations

All commenters complain of the potential interference a 900 MHz allocation would have on their use of the same spectrum. As demonstrated below, however, these theoretical interference potentials are founded on a misunderstanding of Radian's system, and unsupported by over a decade of data on the use of 915 MHz Wind Profilers.

1. No Instances of Interference Have Been Cited by Commenters

Commenters ignore the fact that the Government and Radian have been using 915 MHz Wind Profilers since 1979. In all, some 50 systems have been operated over the past decade, approximately half of which have been operated by Radian. NOAA has operated such a system at Denver's Stapelton International Airport since 1981. Radian operates a system at Los Angeles International Airport. 915 MHz Wind Profilers have been operated in urban locations in New York, California, Texas, Michigan, Alabama, Tennessee, Florida, Idaho, Colorado, and Oklahoma. There are also systems in use at the Kennedy Space Center and White Sands Missile Range, two of the most crowded spectral regions in the U.S.

One can safely assume that if the use of the 900 MHz spectrum for Wind Profilers was going to cause substantial interference to other users of that spectrum, there would be some real world evidence by now. However, this is not the case. Radian has received only one indication from any party that its 915 MHz Wind Profiler system was causing interference. This lone instance was the result of an incomplete pre-installation site survey, and Radian reconfigured the profiler to eliminate

the problem. Radian has worked closely with NOAA and its sites, and is not aware of any instances in which NOAA has received interference complaints. Radian will work with amateurs to ensure that the impact on this secondary use will be negligible similar to what has been done with 400 MHz Wind Profilers. Radian Comments, Appendix B (article from amateur radio publication reporting on cooperative efforts between ARRL and NOAA concerning 400 MHz wind profiler systems).

The subject petition, therefore, does not propose a frequency allocation for a brand new technology, the interference potential of which can be analyzed only at the theoretical level. Instead, Radian's system represents a mature, robust technology that has demonstrated in the real world that it can co-exist with other users of the 900 MHz band.

2. Commenters' Theoretical Interference Claims are Unfounded

A number of the claims of interference raised by the commenters appear to be based on an analysis of 400 MHz Wind Profilers, and not the 915 MHz Wind Profiler system developed by Radian. AMTECH's interference arguments, for example, appear to be based on an analysis of the high power output of 400 MHz Wind Profilers. AMTECH Comments, pp. 8-9.[3] Unlike the 50,000 watt peak power levels used in 400 MHz systems, Radian has developed its 915 MHz system to operate with 1/100 that power -- only 500 watts at peak.

[3] AMTECH claims it uses this analysis because Radian has failed to submit sufficient operating specifications for the 915 MHz system on which such an analysis can be based. Radian submits, however, that sufficient technical parameters exist within the Petition. Radian's system will operate in the same mode as government 915 MHz systems, the operating parameters of which are enunciated in the NOAA Stage 3 request to NTIA appended as Attachment I to Radian's Petition.

Further, the 400 MHz systems operate without the use of side-lobe suppression fences, an integral part of the Radian design.[4]

The main reason that no interference will be caused to existing users is the fact that the energy emitted from the Wind Profiler is directed at or near the zenith angle. The side lobes are suppressed by more than 45 dB at the horizon by use of directional antennas and the side-lobe suppression fences. Further, contrary to the Engineering Statement submitted by EnScan, the average EIRP of the Radian system is 77 dBm, rather than 92 dBm. See Attached Engineering Statement of John Neuschaefer, attached as Appendix A. EnScan's study falsely assumed that the Radian system used the same 6 x 6 meter antenna with 35.6 dB of gain. Instead, the largest Radian system uses 2.6 x 2.6 meter antennas with a total surface area of 6.8 meters square. The total gain on total array is -29 dB. Further, EnScan's analysis ignores the impacts of the pulse of the system. Although the peak power used if +57 dBm, because the system is pulsed, the maximum duty cycle of the transmitter is 15 %. This yields a maximum value of the average transmitter output power of +49 dBm. Thus, the average EIRP is 78 dBm (49 dBm transmitter output plus 29 dBm total antenna array gain = 78 dBm). Finally, EnScan fails to take into account any distance factors. Although it may be true that an EnScan Part 15 device may not be able to be co-located with a 915 MHz Wind Profiler, it should be possible to

[4] Indeed, in the attached proposed rules governing the new Wind Profiler service, Radian has suggested that side-lobe suppression fences be made mandatory to ensure that no interference will be caused to other users of this band. Further, these suppression fences are also incorporated into Radian transportable units -- the side-lobe suppression fences are built right onto the trailer housing the equipment. Thus AMTECH's complaint that transportable units will increase interference probabilities is unfounded. See AMTECH Comments, p. 10.

operate these unlicensed devices at reasonable distances from Wind Profiler operations.[5]

Based on both theoretical and real-world interference analyses, it is clear that the Radian system can co-exist with other users in the 900 MHz band. Issuance of a Notice of Proposed Rule Making should not be withheld because of any inherent interference conflict between existing and the proposed service.

C. An NPRM Is Not Premature

ARRL claims that it would be premature for the Commission to issue a Notice of Proposed Rule Making at this time because as a result of the recent World Administrative Radio Conference (WARC-92), a CCIR Task Group has been formed to study frequency bands for wind profiler radars. ARRL Comments, pp. 2-3. The instant proceeding is not premature, however, for several reasons. First, the WARC action is based largely on complaints of interference from large tropospheric profilers operating between 404-449 MHz with large peak power outputs which can interfere with SARSAT and COSPAS satellites, as discussed above. There is no indication that in Resolution 621 or elsewhere that 915 MHz is not suitable for Wind Profiler use, especially as designed by Radian.

Moreover, the Commission has seen fit in numerous previous instances to pursue domestic allocations for new services simultaneously with international coordination efforts. Radian and NOAA are members

[5] A complete analysis of the compatibility of Part 15 devices is not possible or even necessary. As pointed out above, by definition EnScan's devices must accept interference from authorized users in the 915 MHz band. Further, EnScan has failed to provide the necessary technical specifications for a full analysis of the interference potential of Part 15 devices to a Wind Profiler, and vice versa.

of the CCIR Task Group 8/2 studying the issue, and will provide the results of its ten years of operation in the 915 MHz band to the CCIR Task Group. As in so many other areas, the FCC should seize the opportunity to lead in the development of this new service, and not deny the public the benefits this service offers while some other group debates standards for another region of the spectrum.

The timing of Radian's Petition also tracks the actions taken by NOAA in submitting its Stage 3 authorization request to NTIA. Regardless of whether the FCC creates a commercial Wind Profiler service, there is every likelihood that 915 MHz profilers will be operating by the government pursuant to NTIA authorization. It is certainly more efficient to take up this issue now.

ARRL also complains that the failure of Radian to provide draft rules for the operation of 915 MHz Wind Profilers dooms the Petition to dismissal. In response, attached hereto as Appendix B are draft rules for the operation of the Wind Profiler service. These rules are based on the same technical standards developed by NOAA and Radian and utilized for the past ten years. Parties will be free to comment on these draft rules in response to the FCC's Notice of Proposed Rule Making.

IV. NECESSARY BANDWIDTH ISSUES

One correct point made by ARRL and AMTECH was an internal inconsistency in Radian's petition as to the bandwidth necessary to operate its 915 MHz system. Radian originally sought allocation of 2 MHz (914-916 MHz). In reviewing both the NOAA Stage 3 request to NTIA, and its own operating criteria, however, Radian has concluded that an allocation of 12.5 MHz will be necessary to fully accommodate the

Wind Profiler service. This is the same 12.5 MHz for which Radian has been licensed on an experimental basis, and on which NOAA has operated its systems for the past decade. This increase in bandwidth does not impact the interference issues, because, as demonstrated above, both a theoretical analysis and real world operating experience show that no interference will be experienced by other users of this band. Therefore, Radian respectfully requests that its Petition be amended to seek allocation of 12.5 MHz (908.75-921.25 MHz) for this service.

V. CONCLUSION

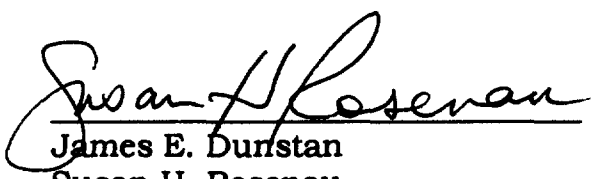
No commenter has raised issues sufficient to deny Radian's Petition, and at least two of the commenters realized this by not opposing outright the Petition. With this Reply, Radian has addressed the major questions raised by the commenters sufficiently to allow the Commission to take the next step in the allocation process.

WHEREFORE, THE ABOVE PREMISES CONSIDERED,

Radian therefore respectfully requests that the Commission issue a Notice of Proposed Rule Making as specified herein and allow the public to fully comment on this valuable service.

Respectfully submitted,

Radian Corporation



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December 17, 1992

CERTIFICATE OF SERVICE

The undersigned, an employee of Haley, Bader & Potts, hereby certifies that the foregoing document was mailed this date by First Class U.S. Mail, postage prepaid, to the following:

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December 17, 1992

APPENDIX A

(To be provided)

APPENDIX B

APPENDIX B
Proposed Rule for Wind Profiler Service

Amend 47 C.F.R Part 90 As Follows:

1) By amending 47 C.F.R. § 209 to add a new subjection (b)(10) which reads:

> **The maximum authorized bandwidth for wind profiler radar system was authorized under this part is 12.5 MHz in the frequency range 908.75 - 921.25.**

2) By amending 47 C.F.R. § 213 to include in the frequency tolerance chart the following line item:

Frequency Range	Over 200 W output power
908.75 to 921.25	+.00001

3) By amending 47 C.F.R. § 231 as follows:

by inserting the language underlined below:

"This subpart sets forth requirements and standards for licensing and operation of non-voice and other specialized radio uses (other than radiolocation). Such uses include secondary signaling, telemetry, radioteleprinter, radiofacsimile, authorities vehicle monitoring (AVM), radio call box relay, vehicular repeater, wind profiler radar operations, and control station operations."

4) By amending 47 C.F.R. § 233(c) as follows:

by inserting the language underlined below:

"Provisions of this section do not apply to authorizations for paging, telemetry, radiolocation, AVM, radioteleprinter, radio call box operations, wind profiler radar operations, or authorizations granted pursuant to subpart T of this part."

5) By adding new Section 90.248 as follows:

Section 90.248 Wind Profiler Radar Operations

(a) These provisions authorize, to persons eligible in the radio services of this part, the licensing of wind profiler radar systems that utilize non-voice radio techniques to sample the lower atmosphere for wind changes, particulate transportation, and ozone levels.

(b) The use of P0N is authorized for operation of transmitters in wind profiler radar systems subject to this section.

(c) Frequencies for wind profiler radar systems are assignable on a secondary basis in the 908.75-921.25 MHz band provided that operations will not cause interference to and can tolerate interference from government stations which operate in these bands and industrial, scientific, and medical (ISM) devices licensed under this part.

(d) Each application to license an wind profiler radar system shall including the following supplemental information:

(i) A detailed description of the manner in which the system will operate, including a map or diagram.

(e) *Technical Standards.*

(1) Wind profiler radar systems authorized for operation will be permissible provided that:

(i) The peak output power of transmitter shall not exceed 500 watts.

(ii) Antenna gain shall not exceed 30 dBi in any horizontal direction.

(iii) Side lobe suppression devices such as fences shall be employed at all site such that the horizontal side lobe is attenuated at least 45 dB below peak operating power.

(f) Wind profiler radar stations are exempted from the identification requirements of § 90.425; however, the Commission may impose automatic station identification requirements when determined to be necessary for monitoring and enforcement purposes.

(g) *Investigation and Elimination of harmful interference.*

The operator of a wind profiler radar station that causes harmful interference to ISM equipment or other primary licensed users shall promptly take appropriate measures to correct the problem.

(i) If the operator of a wind profiler radar station is notified by the Commission's Engineer in Charge (EIC) that operation of such equipment is endangering the functioning of a radionavigation or safety service, the operator shall immediately cease operating the equipment. Operation may be resumed on a temporary basis only for the purpose of eliminating the harmful interference. Operation may be resumed on a regular basis only after the harmful interference has been eliminated and approved from the EIC obtained.

(ii) When notified by the EIC that a particular station is causing harmful interference, the operator shall arrange for an engineer skilled in techniques of interference measurement and control to make an investigation to ensure that the harmful interference has been eliminated. The IC may require the engineer making the investigation to furnish proof of his or her qualifications.

(iii) An interim report on investigations and corrective measure taken pursuant to this subsection shall be filed with the EIC of the local FCC office within 30 days of notification of harmful interference. The final report shall be filed with the EIC within 50 days of notification. The date for filing the final report may be extended by the EIC when additional time is required to put into effect the corrective measures or to complete the investigation. The request for extension of time shall be accompanied by a progress report showing what has been accomplished to date.

APPENDIX C

FOR AGENDA

SPS-9141/2
Item 40-11/12/92
Item 13-12/10/92

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
Washington, D.C. 20230

Office of Radio Frequency Management
Room 3333, Federal Office Bldg. #4
Washington, D.C. 20233

May 29, 1992

MEMORANDUM FOR: Arthur H. Gray, Secretary, Spectrum Planning Subcommittee

FROM: Richard Barth, Department of Commerce Representative

SUBJECT: 915 MHz Boundary Layer Profiler - Stage 3

A system review of the Bounday Layer Profiler is requested. In support of this review, I have attached the usual NTIA forms and a summary of NOAA's profiler efforts in this band.

The Boundary Layer Profiler is a Wind Profiler Radar (WPR) operating in the "boundary layer" near the surface of the earth. It measures wind speed and direction as a function of time and altitude. By adding a Radio Acoustic Sounding System (RASS), air temperature as a function of time and altitude can also be measured. The data thus collected are useful in weather forecasting and other activities such as the tracking of air pollutants and volcanic ash. Related SPS submissions, by Commerce and other agencies, have described wind profilers operating in other frequency bands.

There is no estimated termination date for this equipment. It replaces no existing equipment, but rather is the latest in a series of newly developed systems.

Estimated cost for a profiling system of this type is $100K.

Target date for system approval is "as soon as possible".

Attachments